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Agricultural Experiment Station

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Alabama Polytechnic Institute

AUBURN

CIRCULARS 5, 6 and 7

BY

W. E. HINDS, Entomologist

No. 5. The Boll Weevil Advance in Alabama.

No. 6. Fighting the Boll Weevil.

No. 7. Destroying Boll Weevils by Clean Farming.

1910

J. F. DUGGAR, Director.

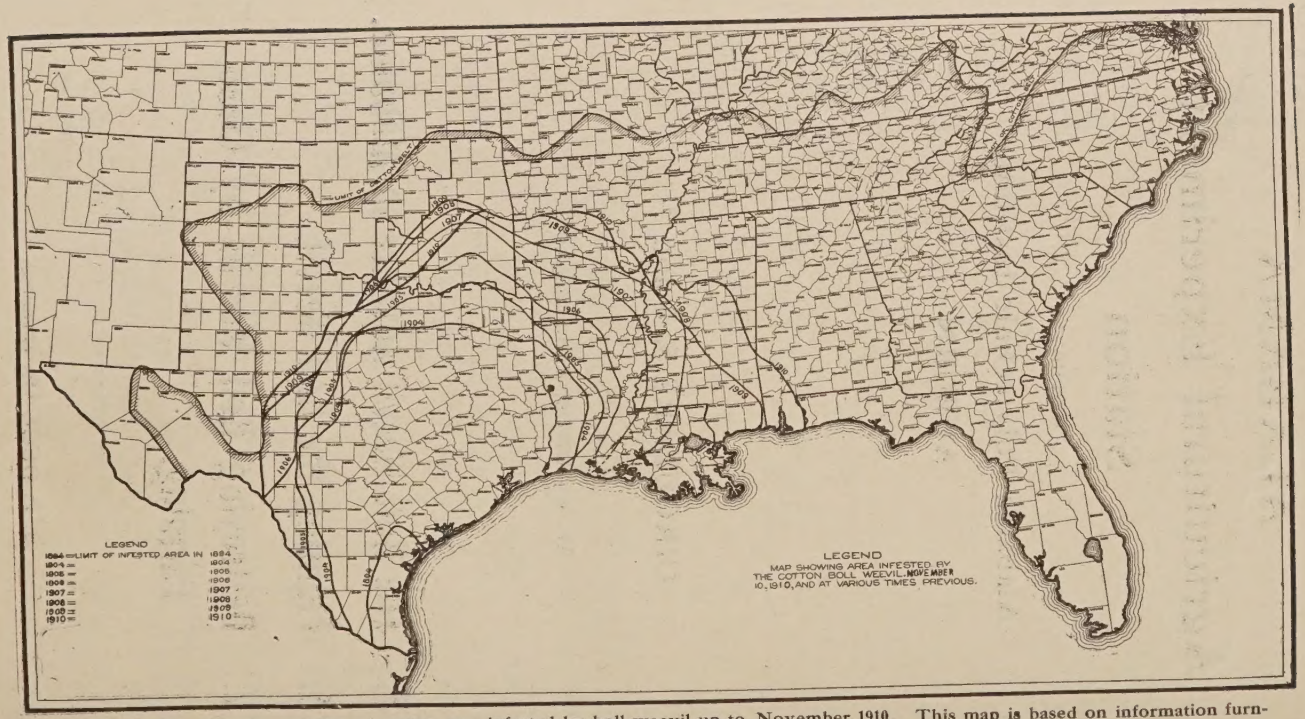
LEGEND
1884 = LIMIT OF INFESTED AREA IN 1884
1904 = 1904
1905 = 1905
1906 = 1906
1907 = 1907
1908 = 1908
1909 = 1909
1910 = 1910
LEGEND
MAP SHOWING AREA INFESTED BY THE COTTON BOLL WEEVIL, NOVEMBER 10, 1910, AND AT VARIOUS TIMES PREVIOUS.

Fig. 1. Map showing portion of cotton area infested by boll weevil up to November 1910. This map is based on information furnished by Bureau of Entomology and various parties in Mississippi, together with our own observations in Alabama.

Circular No. 5

The Boll Weevil Advance in Alabama

By W. E. Hinds, Entomologist.

Weevil Enters Alabama

Since the boll weevil first entered Southern Texas in 1892, it has been an increasingly important factor in our annual production of cotton. Its advance northward and eastward, at an average rate of fully 50 miles per year, has continued steadily until it has now reached our own State. On September 3, 1910, the first specimens of this much dreaded pest were found on the western edge of Mobile County, in Alabama. The weevil advanced so that by the middle of September the line of infestation included about three-fourths of Mobile County. Ten days later, weevils were found in the southern part of Choctaw County.

Weevils entered 6 or 7 Alabama Counties in 1910

The spread of the weevil in 1910 was checked fully a month earlier than usual on account of killing frosts occurring during the latter part of October instead of November as is usual. Undoubtedly this prevented a considerable extension of the newly infested area. Information gathered from many sources shows that only in Southwest Texas has the weevil reached the limit of the cotton growing area. Along the northwestern edge of the weevil line, in Oklahoma, the weevil has not fully recovered the territory which it lost through being killed out by extremely severe climatic conditions during the past two or three years. In central Mississippi an unusually large movement occurred during September and the early part of October. In Alabama there was practically no movement of the weevil after the middle of October because of the immediate occurrence of frost about that time. This check in the weevil movement will correspondingly delay its advance in 1911 into other Alabama counties. If the movement of 1911 does not exceed that of the present short season, it will still bring the boll weevil into Dallas County and assure the infestation of between twenty and twenty-five counties in the southwestern corner of Alabama.

The fight should begin now

ALL COTTON PLANTERS WITHIN THIS SOUTHWESTERN CORNER OF ALABAMA SHOULD PLAN TO TAKE UP THE FIGHT AGAINST THE BOLL WEEVIL IMMEDIATELY. AVOID THE LOSS SURE TO FOLLOW IF COTTON CULTURE BE CONTINUED IN THE USUAL WAY. COTTON CAN STILL BE

PLANTED AND YIELDS GREATLY INCREASED BY THE IMMEDIATE ADOPTION OF THE IMPROVED METHODS DESCRIBED IN THIS CIRCULAR.

Damage can be prevented

The advent of the weevil is a fact of the utmost importance to the cotton planters of Alabama. Only by immediately adopting and putting into practice part or all of the methods which have been found most effective in controlling the weevil in Texas, Louisiana and other States, can the planters of Alabama avoid passing through the same experience of loss as planters have suffered in previously infested territory. These methods have been thoroughly tried and proven practical and effective. **THE WEEVIL IS HERE. THE TIME TO ACT IS NOW!** It is the object of this and other circulars, which will be put into the hands of planters in Alabama within the next few months, to show exactly what methods should be adopted and how the damage done by the weevil to cotton may be reduced as much as is possible. The following paragraphs briefly describe the different stages of the weevil as found in cotton and outline the life history, so that the reason for the effectiveness of many of the practices advised may be evident to the intelligent reader.

STAGES AND WORK OF THE BOLL WEEVIL.

The Boll Weevil attacks cotton only

The boll weevil is a beetle belonging to a large group all of which have part of the head in front of the eyes greatly extended to form a long, slender snout. There are many hundreds of species of these insects, all of which are commonly called "weevils," but the Mexican cotton boll weevil is the only one attacking cotton. (See Alabama Bulletin, No. 146.)

Four Stages:

1. Egg

The boll weevil breeds upon cotton and upon nothing else. Like all other beetles the boll weevil has four distinct stages in the development of each individual. These are the egg, which is only about 1-30 of an inch long, and is always deposited in a cavity which the female eats in the square or boll and upon no other part of the plant.

2. Grub

From the egg there hatches in a few days a white, legless grub or worm which does not at all resemble the beetle which it may finally become. The grub of the boll weevil resembles very closely the worms found in peaches and plums. The boll weevil grub grows steadily from a length of about 1-25 of an inch when it hatches until it becomes fully grown and measures 1-5 to 2-5 of an inch in length.

3. The Pupa

In order to attain the beetle form the grub must pass through an intermediate "transformation

stage," which is known as the "pupa." In this stage no food is taken, and there is a complete change of the appearance and of structure. The grub sheds its skin and instead of the legless, wingless, snoutless worm, the pupa appears with all of these organs forming in sheaths closely applied to the body. In this stage the insect is very delicate, and perfectly helpless. It, as well as the egg and grub stages, is passed wholly within the interior of the square or boll. These three constitute the immature stages in the life of the weevil, but are as characteristic of the insect as is the adult form.

The crescentic grub, about 3-8 inch long when fully grown, and the pupal stage occur only in squares and in bolls. This is the only insect which breeds in this way in cotton.

Adult

After a few days the pupa sheds its skin and becomes the fully formed adult weevil, having the legs and snout free and usable, as are also the wings, which are folded back, under and protected and hidden by, the hard wing-covers, which meet in a straight line over the middle of the back of the beetle. For a few days the adult also remains protected within the square or boll while it becomes hardened and more able to care for itself. It then cut a circular hole just the size of its body in the wall of its cell in the square, and through this opening makes its escape into the outer world, where from that time on it leads a free and active life.

The adult beetle found on cotton only, is about 1-4 inch long, including the slightly curved snout, and dark brown, ashy-gray, or yellowish brown in color.

Feeds and Lays Eggs

The occurrence of open cavities 1-16 to 1-20 inch in diameter and reaching down to larger excavations among the pollen sacs, the presence of "warts" marking the egg punctures of the weevil, the occurrence of the orange-colored excrement of the beetles on the buds, the abundant shedding of squares and the consequent scarcity of blooms without accompanying temperature, rain, or cultural conditions to cause the shedding; these are among the most conspicuous signs of boll weevil presence and injury.

HOW WEEVILS PASS THE WINTER.

Multiply in late squares and bolls

The full grown weevils fly, especially during the period from August 15 to November 15, and their spread into new territory is accomplished almost entirely in this way. When female weevils reach new, uninfested territory, they feed for a short time and then begin to deposit eggs at the rate of from 6 to 10 per day, in such squares and small bolls as they can

find. Each female may lay a considerable number of eggs and in the course of three or four weeks, a new generation will be produced in this field. These weevils may continue the process so that before frost kills the plants, a large number of weevils will have been developed from the few weevils which flew into the new territory. To prevent this breeding, the practice of producing an early maturing crop of cotton, harvesting as soon as the cotton can be picked out and then immediately up-turning and burning the stalks, is strongly urged. Weevils feed only upon green cotton, and if this be destroyed a few weeks before frost makes it favorable for weevils to enter winter quarters, a very large proportion of the weevils will be destroyed. This step in weevil control is fully described in Circular No. 7.

Breeding continues until frost

Weevils pass the winter in the full grown beetle stage, hiding in or under any kind of trash which may be found in or around the cotton field. Cleaning up this rubbish is exceedingly important, as it reduces the chances of weevils living through the winter.

Weevils winter in trash

Wherever weevils occur in the fall, some will come out of winter quarters the next spring and be ready to attack cotton as soon as it breaks ground. The very last of the weevils leaving winter quarters may not emerge until even as late as the first of July. They are therefore ready to attack cotton at any time and can live upon the tender stems for as long as is necessary before squares begin to form. As soon as squares appear, the weevil's concentrate their attacks upon them, feeding and laying their eggs therein. By the middle of August it is likely that the weevils will be so abundant, if nothing has been done to control them, that no further cotton will be set. The period from the setting of squares to the formation of a good number of half-grown bolls should be as short as possible and upon the abundance of fruit set during this period depends the cotton crop in weevil infested fields.

Weevils leave winter quarters gradually

Breeding begins in squares

Migration occurs in fall

From the middle of August until frost checks their movement, many weevils will fly in search of uninfested squares. This flight constitutes the fall spread of the insect.

The general plan of fighting the weevil is outlined more completely in Circular No. 6. Read that next and keep this circular, as reference will there be made to some of the points herein explained.

Keeg all circuars

CIRCULAR No. 6

Fighting The Boll Weevil

By W. E. Hinds, Entomologist.

Cotton growers must reckon with the weevil

As indicated in Circular No. 5, the Mexican cotton boll weevil must be reckoned with in the production of all future cotton crops within the infested area.

Observations as to the effect of the weevil in newly infested territory in reducing cotton production shows that in sections where the attempt was made to continue cotton raising in the old way, the yield has often been reduced to about 50 or 60 per cent. of the normal crop during the first few years of the weevil's presence. Gradually the methods of raising cotton became adjusted to the necessities of the case, other crops besides cotton are grown increasingly, and the cotton crop has regained its normal size. The last condition of the cotton grower is better than the first, but the path of progress has led through several years of loss and suffering. Through the accumulated knowledge and experience of experts who have been fighting the weevil, and the demonstrations of many thousands of planters, we now know that the weevil can be controlled and cotton culture continued even more successfully than has been usual in the past.

IT IS NOT A HOPELESS FIGHT.

COTTON CULTURE NEED NOT BE ABANDONED. But to continue growing cotton successfully several improvements in our agricultural practice are imperative. Some of the steps in a reliable system of fighting the weevil successfully will be briefly outlined in this circular. Several of them will be more fully described in separate articles prepared by men who can speak with authority. This outline cannot even mention many points which might be profitably followed, but is intended to show only the principles and some of the special practices which have proven effective in other sections and which will in time become generally adopted here.

Not a hopeless fight

Shall we not begin this fight at once, rather than first lose a large part of two or three crops and then be forced to adopt these ideas?

Cotton crop must be made early

1. No principle has been more clearly established than this: **Successful cotton crops in weevil infested territory must be made early.** The multiplication of the weevil is so rapid that after the third or fourth

generations become adult there is no chance for more bolls to be set. The presence of the weevils absolutely prevents any "top crop," and usually makes the raising of "late cotton" practically an impossibility.

Early planting alone is not enough

More things are involved in making a good crop of cotton early than merely early planting of the seed. That alone is not enough to insure success. It is not so much a question of planting extra early as it is of reducing as much as possible the time between the first formation of the squares and the development of an abundance of bolls to a size at which they are practically resistant to weevil attack. With most varieties weevils cannot puncture and successfully deposit eggs in bolls that are half grown or larger.

Select seed carefully

2. One of the most important and best paying steps in making large yields and earlier maturing crops is the careful selection of seed. **We cannot afford to continue to plant "gin-run" seed.** You may pay fancy prices for high grade seed to start with, but after a few years without selection and with careless ginning, it will be badly mixed and give much poorer yields. Use your own brain and keep the money in your pocket instead of paying for the use of some other man's intelligence and industry. Get good seed to start with, then select carefully for next year's planting. Remember that it is possible to largely control the size of the plant, its branching, fruitfulness, size of bolls, number of locks and percentage, length and quality of lint, time of maturity, etc., by careful seed selection. For further suggestions on Seed Selection, see Circular No. "A" 67, U. S. Department of Agriculture, Bureau of Plant Industry.

Pick Cotton promptly

3. It should need no argument to prove that cotton should be picked out promptly after it opens. There is nothing to gain and much to lose by allowing it to hang and weather and beat out onto the ground even where there are no weevils, but where weevils occur, prompt harvesting cannot be too strongly urged. This is to clear the way for the early destruction of all green cotton. We cannot even afford to wait for the last fe wbolls or "scrappings," as this waiting delays the work of destroying stalks.

Destroy all green cotton as early as possible to save next year's crop

4. Having selected seed for next year's planting and harvested the main crop, then the next step in point of time is to **UPROOT, WIND-ROW AND BURN THE COTTON STALKS. STARVE THE ADULTS WHICH CAN FEED ONLY ON COTTON. PREVENT THE DEVELOPMENT OF THOUSANDS OF WEEVILS** in the late fall

growth of squares and bolls which never can do anything but breed weevils.. **Do this to save next year's crop.**

See Circular No. 7 on this subject.

Raise a variety of Crops. Diversify

5. The weevils can live only on cotton, but neither the farmer nor his stock can do this. Our monopoly of cotton raising and the assurance of some crop even with the most shiftless of methods, have been among the greatest curses of our Southern agriculture. The effect has been particularly bad during the past fifty years. We cannot continue a "one crop" (cotton) system with the boll weevil present.. **We can and must raise a variety of crops. This is diversification.** Plant especially such crops as can provide food supplies for man and beast on the farm. Stop having to buy and pay big profits to others for the food that you can as well raise at home. Diversification makes it possible also to build up the soil and make it more productive without depending solely on expensive commercial fertilizers. In no section can a greater variety of crops be grown than here in Alabama, and we have the added advantage of being able to secure from two to four crops each year on the same field. (See Circular No. 8.)

Rotate Crops

6. Raising a variety of crops brings up many questions as to desirable combinations or changes that should be made from year to year. This is what is meant by the term **rotation of crops.** Rotation may be planned for a number of purposes aside from the direct result of the crops secured. The vegetable matter in the soil can be increased and fertility can be improved especially by using such crops as cow-peas, beans, velvet beans, vetch, etc. The growth of weeds may be prevented and the injury due to both fungus diseases like the boll rot and insect pests such as the boll weevil may be largely reduced by the wise practice of rotation. (See Circular No. 9 for a discussion of Rotation of Crops as a means of fighting the weevil.)

Prepare soil more deeply and thoroughly before planting

7. The nature and extent of preparation to be given the soil before planting and the cultivation to be given the crop while it is growing become exceedingly important questions in producing profitable crops and especially early maturity in cotton. It is needless to say that the average cotton field is not "worked." It is barely "scratched." The results of innumerable experiments and the practical experience of all of the most successful planters prove that **deeper plowing with more thorough working of the soil before planting** is one of the first

principles in any more successful system of agriculture.

Plant as early as soil and air conditions are favorable

8. It is a well known fact that early planted cotton commonly yields better than that planted late. Extremely early planting is hardly desirable or advisable. The object is to have the plant grow off rapidly and steadily, so that the fruiting may be abundant but the period from squaring to the real making of the crop may be as brief as possible. Plant then as early as soil and air conditions become favorable.

Cultivate only about one and one-half inches deep

Cultivation of the crop should be shallow and frequent. Its first object is to keep the ground in a favorable condition for the growth of the plants and the destruction of grass and weeds is accomplished incidentally. The surface of the ground should be stirred every week or ten days during the growing season to a depth of about 1 1-2 inches. Where the weevil is found the crop should not be "laid by" as early as usual, but cultivation continued two or three weeks longer. Late planting with the idea of starving out the over-wintered weevils is entirely ineffective and should never be attempted in weevil territory.

Summer control difficult

9. Although no summer practice is nearly as effective as is the early fall destruction of stalks for holding the weevils in check, there are several measures that may be profitably followed under especially favorable conditions. The deciding factor is usually the availability of a labor supply that costs little if any extra. While it will not pay to employ hands to pick up fallen infested squares at even 75 cents per day, it will pay to do this if the children in the family can do the work. Most cotton squares fall to the ground in about ten days after the weevil eggs are placed in them. In a week or ten days more they produce adult weevils. If done at all, it pays to get the first fallen squares and to do the work thoroughly. Begin the collection about two weeks after the first squares are formed, and then go over the fields every fifth or sixth day for a month or more.

Picking fallen Squares may help

We can make cotton in spite of weevils

No direct insecticidal practice can be recommended, as it is practically impossible to reach the weevils on account of their peculiar feeding and breeding habits. This is the reason why we must depend upon cultural methods for weevil control. **If the cultural methods here outlined are faithfully practiced then there will be little difficulty in producing increasingly profitable crops of cotton in spite of the boll weevil.**

CIRCULAR No. 7

Destroying Boll Weevils by Clean Farming

By W. E. Hinds, Entomologist.

Weevils breed in cotton until frost kills it

Weevils are absolutely dependent upon cotton for feeding and breeding. As a rule, the number of weevils in the field is considerably reduced during the period while cotton is opening. After the crop is matured, if favorable rains occur, there is usually a considerable growth of late squares with blooms and many small bolls formed. This condition is remarkably favorable for the development of weevils; and the number of weevils increases very rapidly until frost destroys the cotton.

Migrated weevils become established in late top growth

Migrated weevils, which have flown many miles into new territory, are likely to find just this late growth of squares in which they reproduce and thus establish the weevils in the new territory. It is possible for two or three generations to be thus produced before frost. The danger is that planters may not realize the presence of the weevils, as the fields are usually neglected after the cotton is picked out, and thus the conditions most favorable for the weevils are left without a single effort being made to remove them. Naturally not as many weevils are likely to be produced in the new territory as may be found during the fall in older infested fields. But the danger to the crop of the following year may be nearly as great.

Many thousands of weevils may occur on each acre of cotton

In old infested fields, it is by no means uncommon to find from one to four or five weevils for each plant growing in the field. This means from five to twenty-five thousand weevils per acre may be found at the time of the first frost. It is a well established fact that the weevils developing and becoming adult late in the fall are those which are most likely to survive the winter. They have not exhausted their vitality by long flights or by any considerable reproductive activity, as have older weevils. It becomes doubly important therefore that the development of weevils late in fall should be prevented as much as is possible.

Weevils hibernate as adults

As with nearly all insects, the winter season is passed quietly and without feeding by the full grown or adult weevils, which find shelter in any kind of rubbish in or around the cotton fields where they

are when the first frost occurs. The dormant winter condition of the insect is spoken of as hibernation.

Hibernation usually begins with first killing frost

As cool weather approaches in the fall, weevils become less active and some may seek winter shelter even before frost occurs. Most of them, however, continue to feed until green cotton is largely destroyed. The occurrence of the first killing frost is a signal for the great majority of weevils to seek shelter for the winter. This we call entering hibernation. If the freeze is severe enough to completely destroy squares and bolls, the immature stages of the weevil in them are likely to be killed, but if only foliage is killed, the immature stages may complete their development and emerge, or enter hibernation within the unopened bolls especially.

Hibernate principally in the cotton field

Under ordinary conditions, few weevils fly to any considerable distance from the cotton fields in search of winter quarters. They have no power of purposely selecting exceptionally favorable conditions. It is well known, however, that during warm days following frosty nights, weevils having little shelter may be again somewhat active and again enter shelter, so that in time the weevils gradually secure the most favorable shelter available. The large majority of weevils find winter quarters in or near the field in which they were feeding when frost occurred. Innumerable experiments have shown that the most favorable conditions for successful hibernation are found in fields in which the cotton stalks, with grass, weeds, fallen leaves, etc., are left undisturbed until nearly time to plant the following spring. Under these conditions, the maximum number of weevils will survive.

Standing stalks give most favorable shelter for weevils

Under exceptionally favorable conditions over 40 per cent of the fall weevils may survive

A large number of carefully planned and executed experiments have been made to determine the effect of the destruction of green cotton at varying dates in the fall, and the effect of various classes of shelter upon the survival of weevils. It has been found that the range in survival is sometimes as low as a fraction of one per cent., when conditions are unfavorable, and again as high as between 40 and 45 per cent. where exceptionally favorable conditions and seasons have occurred. It is needless to say that there is very little prospect for successful cotton culture under the latter condition.

WILL YOU CHOOSE TO DESTROY THE WEEVILS IN THE FALL OR HAVE THEM DESTROY YOUR COTTON CROP NEXT YEAR? The earlier stalks are destroyed, the fewer weevils will survive the winter and the smaller will be the damage to the succeeding crop. THIS EARLY FALL DESTRUCTION OF THE

STALKS IS THE MOST IMPORTANT SINGLE STEP IN THE ENTIRE FIGHT AGAINST THE BOLL WEEVIL. Wherever weevils occur, or may enter new territory, stalks should be up-rooted and burned if possible at least a month before frost.

Three methods of destroying stalks

There are several methods of destroying cotton stalks, each of which has some points of advantage, but only one of which is absolutely certain in its results and can be fully recommended. The preferred method involves the up-rooting, piling and burning of the plants. A less effective method, but one which may be followed under certain conditions, is to cut the stalks down with a stalk chopper and plow them under deeply, following the plowing with a discing of the field. The third method, which can be possible only in exceptional cases, is to turn in sufficient stock to graze off all green cotton within a few days' time.

Burning method only is fully effective

For the burning method, stalks may be up-rooted in various ways. The cheapest, most effective and preferred plan is to use what is known as the "A"-shaped stalk cutter. This consists essentially of strongly braced timbers, forming a triangle having sharp, strong knives fastened to the under side of each divergent arm, so as to cut two rows of stalks below the surface of the ground at one time, and throw two adjacent rows into one wind-row. This machine has been fully described in Circular No. 30, of the Louisiana State Crop Pest Commission, and a copy of this circular can probably be obtained by request addressed to the Director of the Experiment Station, Baton Rouge, La. The machine may be made at home by an ordinary carpenter with the iron work done by local blacksmith at a cost for materials of about $5.00. With one of these cutters from 10 to 15 acres of stalks can be cut per day. If any stalks are not completely severed, they should be chopped out or pulled so that they will not keep green. The stalks in wind-rows may be piled by using a pea-vine rake or in some other way, and will be ready for burning in a week or ten days with dry weather.

Stalk cutter home-made $5.00 to $10 00

Plowing out stalks is unsatisfactory

Stalks may be plowed out, but this is less satisfactory, as many of the roots remain in the ground so firmly that they will need to be pulled. A more laborious method is to up-root them by means of a lever, having in it a notched groove to take firm hold upon the base of the stalk. The stalks should be placed in position to burn while still green to avoid scattering foliage, squares, bolls, etc. The weevils are then concentrated upon the rows or piles of stalks and nearly all of them will remain there until

Burn as soon as foliage and tips are dry

burning can be accomplished. Burn as soon as the foliage is dry enough to produce a good heat, even though the stalks themselves may still be too green to burn cleanly.

Burning destroys weevils in several ways

Burning stalks destroys weevils in a number of ways. First, it will get immediately a large proportion of the weevils already adult and active. Second, it will absolutely destroy all immature stages in squares and bolls. These stages developing into late weevils would be the ones most likely to survive the winter. Third, by the removal of all green cotton, weevils which escape the fire will be likely to starve to death before they succeed in finding food. Fourth, the destruction of the stalks removes a large proportion of the materials which provide most favorable shelter for the weevils during the winter, and weevils still remaining in the field are therefore more likely to perish, or of driven out of the field, less likely to find favorable shelter.

Weevils may escape if plowed under

The practice of running a stalk chopper over the field and then trying to turn the stalks under is far less effective since many roots will still remain in the soil to give rise to sprouts upon which the weevils may survive until frost. Ordinary plowing will allow a large proportion of the weevils on the surface of the ground to escape, as experiments have shown that weevils may make their way out through several inches of ordinary loosely plowed soil.

Grazing the stalk is poorest method

Grazing is probably less effective than either of the other methods. Invariably considerable sprout cotton exists in grazed fields, and this is sufficient to maintain adult weevils until they enter hibernation. They can then find plenty of shelter in these unplowed fields.

Clean up the farm. Remove the stumps

Besides the destruction of stalks, there are a number of other points included in what may be called clean farming which should be carefully looked after in fighting the weevil. The presence of stumps or dead timber in the field, while bad agricultural practice under any conditions, is especially favorable to weevil hibernation. Dr. S. A. Knapp has estimated that the presence of stumps in a field costs the cotton farmer on the average $3.00 per acre each year. With the boll weevil present, they may cost far more than this, because of the shelter which the weeds, growing around them, may give to hibernating weevils. They cost also by preventing the use of improved machinery, which is especially desirable in boll weevil territory.

Clean ditches, turn-rows and fence lines

In general, we would say clean up all kinds of rubbish along ditches, terraces, turn-rows, and around the edges of the field to reduce the chances

of weevils hibernating successfully. This will decrease the injury done by other insects besides the boll weevil.

It pays to destroy the stalks

From the many demonstrations which have shown the great value of early destruction of stalks in fighting the weevil, we may consider one definite case in which the records were carefully kept and definitely authenticated. On the Gulf coast of Texas in the fall of 1906, the planters in an isolated locality, including 400 acres of cotton, were persuaded to destroy their cotton stalks by burning during the first ten days of October. No cotton was grown nearer than fifteen miles, and here a suitable check area was found. In the check field stalks were allowed to stand as usual until planters were ready to begin their spring work. Without making any other change in the practice usually followed by the planters in each of these localities, the yield obtained in 1907, upon the 400 acres, averaged better than two-thirds of a bale per acre in spite of the fact that the soil was rather poor and sandy. Upon the check area hardly one-half of this yield was obtained, although the land here was richer than upon the 400 acre tract. The difference in yield can be attributed only to the difference in the manner of handling to stalks the preceding fall.

$20.00 per acre on 400 acre

At the market value of cotton that year, the increased yield due to fall destruction of the stalks was worth fully $20.00 per acre, or more than enough to have bought the land upon which the crop was grown. Somewhat similar good results can be obtained anywhere that the weevil occurs.

Read other circulars

Early fall destruction of stalks clears the way for deep fall plowing and the use of a winter cover crop. Suggestions as to crops which may be used in this way may be found in Circulars Nos. 8 and 9.

IF STALKS ARE DESTROYED BY OCTOBER 10 EACH YEAR, AS GOOD CROPS OF COTTON CAN BE MADE AS IN THE PAST AND IF OTHER IMPROVED PRACTICES ARE ADOPTED, AS SUGGESTED IN THESE CIRCULARS, THE AVERAGE YIELD OF COTTON IN ALABAMA CAN BE GREATLY INCREASED IN SPITE OF THE PRESENCE OF THE BOLL WEEVIL.

IF YOU WOULD MAKE A GOOD COTTON CROP NEXT REAR, SEE THAT THE STALKS AND THE WEEVILS ARE COMPLETELY DESTROYED EARLY EACH FALL. THIS IS THE LAST STEP IN HANDLING ONE COTTON CROP AND THE FIRST STEP IN MAKING THE NEXT ONE BETTER.